

1. A semiconductor device comprising:

said pre-set number of terminals being constructed so as not being electrically connected to one another by said heat radiating paths and said heat sink members.

3. A semiconductor device wherein a first terminal of the active element is connected via an electrically conductive member to a heat sink member, and wherein a second terminal of the active element transmits heat to said heat sink member via at least an insulating member interposed in-between.

4. The semiconductor device as defined in claim 1 wherein said heat sink member is a heat sink member of a package mounting the active element.

5. The semiconductor device as defined in claim 2 wherein

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10. The semiconductor device as defined in claim 9 wherein said insulating member is arranged on at least one of (a) a terminal surface of said active element and/or (b) a heat

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sink member side of the package used for mounting the active element.

11. The semiconductor device as defined in claim 2 wherein the insulating member comprises aluminum nitride.

12. A method for producing a semiconductor device in which an active element formed on a substrate is connected to a heat sink member of a package accommodating said active element, comprising the steps of:

- 5 (a) forming a gate electrode on said substrate;
- (b) forming a first insulating film having holes provided in the substrate at position of a drain electrode and a source electrode respectively;
- (c) forming said drain electrode and said source electrode on said substrate;
- 10 (d) forming a second insulating film on the entire surface of said substrate and planarizing the surface until said drain electrode and the source electrode are exposed;
- (e) forming an insulating member on said drain electrode;
- 15 (f) forming on said substrate a third insulating film having a hole provided at the position of the source electrode and planarizing the surface until the surface of said insulating member of said drain electrode is exposed; and
- (g) forming an electrically conductive member on said third insulating film.
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13. A method for producing a semiconductor device in which

an active element formed on a substrate is connected to a heat sink member of a package accommodating said active element, comprising the steps of:

- 5 (a) forming a gate electrode on said substrate;
- (b) forming a first insulating film having holes provided in the substrate at positions of a drain electrode and a source electrode, respectively;
- (c) forming said drain electrode and the source electrode on  
10 said substrate;
- (d) forming a second insulating film on the entire surface of the substrate and planarizing the surface until the drain electrode and the source electrode are exposed;
- (e) forming an insulating member on said drain electrode;
- 15 (f) forming a metal protuberance on said package in register with the source electrode of said active element; and
- (g) bonding said active element and the package so that said source electrode of said active element and the metal protuberance of the package face each other.

14. A method for producing a semiconductor device in which an active element formed on a substrate is connected to a heat sink member of a package accommodating said active element, comprising the steps of:

- 5 (a) forming a gate electrode on said substrate;
- (b) forming a first insulating film having holes provided in the substrate at positions of a drain electrode and a

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source electrode respectively;

(c) forming said drain electrode and said source electrode  
10 on said substrate;

(d) providing on said package an insulating member at a  
position facing the drain electrode of said active element;

(e) providing a metal protuberance on said package in  
register with the source electrode of said active element;

15 (f) bonding said active element and the package so that said  
source electrode of said active element and the metal  
protuberance of said package face each other and so that the  
drain electrode and the insulating member of said package  
face each other.

15. The method for producing a semiconductor device as  
defined in claim 12 wherein said insulating member  
comprises aluminum nitride.

16. The method for producing a semiconductor device as  
defined in claim 13 wherein said insulating member  
comprises aluminum nitride.

17. The method for producing a semiconductor device as  
defined in claim 14 wherein said insulating member  
comprises aluminum nitride.

18. The method for producing a semiconductor device as  
defined in claim 12 wherein said active element is a high-  
output-power FET formed on a GaAs substrate and wherein said  
insulating member comprises aluminum nitride.

20. The method for producing a semiconductor device as defined in claim 14 wherein said active element is a high-output-power FET formed on a GaAs substrate and wherein said insulating member comprises aluminum nitride.

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